

SUBSTITUTE SPECIFICATION

BACKGROUND AND SUMMARY

- [0001]** The present disclosure relates to a solid-bowl centrifuge that includes a solid-bowl centrifuge, particularly a solid-bowl screw-type centrifuge, having a centrifugal drum rotatable about a horizontal axis of rotation, which has a weir for draining a liquid out of the centrifugal drum and which weir has a passage with at least one or more passage openings in an axial end region or drum lid characterized.
- [0002]** A solid-bowl centrifuge of the above-mentioned type is known from European Patent Document EP 0 702 599 B1 and U.S. Patent Document US 5,593,377 respectively. These two documents disclose a solid-bowl screw-type centrifuge with a drum, having a weir which is provided with a passage for draining a liquid phase separated in the centrifugal drum, a throttle disk being assigned to the passage. The orifice plate is constructed as a non-rotating part whose distance to the passage is variable, so that an adjustment of the liquid level in the centrifugal drum becomes possible by an axial adjustment of the orifice plate.
- [0003]** The stationary orifice plate has no disadvantageous effect on the method of operation of the centrifugal drum. In particular, there is no disadvantageous braking effect as a result of the liquid passing through an annular gap between the rotating weir and the stationary liquid plate.
- [0004]** The annular gap generates a flow resistance which is greater the shorter the axial distance between the weir and the orifice plate. However, as the flow resistance increases, a greater fluid pressure is required at the passage, which leads to a rise of the liquid level in the centrifugal drum. When the axial distance between the weir and the orifice plate is enlarged, the liquid level in the centrifugal drum will fall to a value caused by the passage of the weir without such an orifice plate.
- [0005]** This solution has been very successful in practice because it can be implemented in a simple and cost-effective manner by a construction of the orifice plate which is stationary during an operation and does not rotate along with the drum. This is, without the necessity of transmitting adjusting forces to co-rotating parts of the centrifuge, and